

553, 277

## (12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property  
Organization  
International Bureau



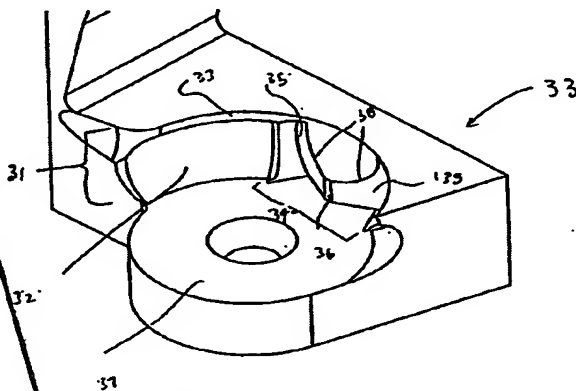
(43) International Publication Date  
4 November 2004 (04.11.2004)

PCT

(10) International Publication Number  
**WO 2004/094092 A1**

- (51) International Patent Classification<sup>7</sup>: **B23C 5/22** (GB/US); 9051 Fallswood Lane, Brentwood, TN 37027 (US).
- (21) International Application Number: **PCT/US2004/006377** (74) Agents: **VICCARO, Patrick, J. et al.**; Allegheny Technologies Incorporated, 1000 Six PPG Place, Pittsburgh, PA 15222-5479 (US).
- (22) International Filing Date: **2 March 2004 (02.03.2004)**
- (25) Filing Language: **English** (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (26) Publication Language: **English**
- (30) Priority Data: **10/414,358** **15 April 2003 (15.04.2003)** **US** (84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, SK).
- (71) Applicant (for all designated States except US): **TDY INDUSTRIES, INC.** [US/US]; 1000 Six PPG Place, Pittsburgh, PA 15222 (US).
- (72) Inventors, and
- (75) Inventors/Applicants (for US only): **DUFOUR, Jean-Luc** [FR/US]; 103 Niblick Court, Franklin, TN 37064 (US). **FANG, X., Daniel** [AU/US]; 509 Hodges Court, Franklin, TN 37067 (US). **WILLS, David, J.**

[Continued on next page]

(54) Title: **ANTIROTATION TOOL HOLDER AND CUTTING INSERT**

(57) **Abstract:** The present invention relates to embodiments of a cutting tool holder (10) having at least one insert pocket (13), wherein at least one insert pocket comprises a side surface (15) and at least one antirotation stop (16) protruding from the side surface. The antirotation stop may comprise at least two substantially planar surfaces. In certain embodiments, the cutting tool holder may have a pocket which comprises a bottom surface and an antirotation stop having three substantially planar surfaces that are substantially perpendicular to the bottom surface. The antirotation stop may be integral to the tool holder or may be produced separately and attached, either permanently or temporarily, to the tool holder. Embodiments may further comprise additional antirotation stops as desired by the machining application. In one embodiment, the cutting tool holder includes an insert pocket in the tool holder and at least one antirotation stop protruding from at least one of a side wall and the bottom surface of the insert pocket, wherein the antirotation stop comprises at least two substantially planar surfaces. A cutting insert (12) may be secured in the tool holder, wherein the cutting insert has a recess (17) having a shape that is non-complementary to the shape of the antirotation stop and may be made from tungsten based carbide or cermet.

BEST AVAILABLE COPY

WO 2004/094092 A1